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AJINOMOTO CORP SERV LLC

202 457 0107 P.10/12

At't'y Dkt. No. US-109

U.S. App. No.:10/784,986

IN THE CLAIMS:

- 1.(previously presented) A protein selected from the group consisting of:
 - (A) a protein which has the amino acid sequence of SEQ ID NO: 4;
 - (B) a protein which has the amino acid sequence of SEQ ID NO: 4 including substitution, deletion, insertion or addition of one or several amino acid residues and has lysine decarboxylase activity.

- 2.(previously presented) A protein selected from the group consisting of:
 - (A) a protein which has the amino acid sequence of SEQ ID NO: 4;
 - (B) a protein which has the amino acid sequence of SEQ ID NO:4 including substitution, deletion, insertion or addition of one or several amino acid residues, whereby said protein has lysine decarboxylase activity and is at least 90% homologous to SEQ ID NO: 4.

- 3.(previously presented) A DNA encoding a protein selected from the group consisting of:
 - (A) a protein which has the amino acid sequence of SEQ ID NO: 4;
 - (B) a protein which has the amino acid sequence of SEQ ID NO: 4 including substitution, deletion, insertion or addition of one or several amino acid residues and has lysine decarboxylase activity.

- 4.(previously presented) A DNA encoding a protein selected from the group consisting of:
 - (A) a protein which has the amino acid sequence of SEQ ID NO: 4;
 - (B) a protein which has the amino acid sequence of SEQ ID NO: 4 including substitution, deletion, insertion or addition of one or several amino acid, whereby said protein has lysine decarboxylase activity and is at least 90% homologous to SEQ ID NO: 4.



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5.(previously presented) The DNA of claim 3, selected from the group consisting of:

- (a) a DNA which has the nucleotide sequence of the nucleotide numbers 684 to 2930 in SEQ ID NO: 3;
- (b) a DNA which is hybridizable with a DNA having the nucleotide sequence of the nucleotide numbers 684 to 2930 in SEQ ID NO: 3 under stringent conditions and which encodes a protein having lysine decarboxylase activity.

6.(previously presented) The DNA of claim 3, which is derived from a chromosome of a *Methylophilus* bacterium.

7.(previously presented) A *Methylophilus* bacterium which produces L-lysine and is modified so that intracellular lysine decarboxylase activity is reduced or eliminated.

8.(previously presented) A *Methylophilus* bacterium which produces L-lysine, wherein a gene on a chromosome having a nucleotide sequence identical to the DNA of claim 3 is disrupted, or a gene on a chromosome having homology to the DNA of claim 3 to such a degree that homologous recombination with the DNA occurs is disrupted, thereby expression of said gene is suppressed and the intracellular lysine decarboxylase activity is reduced or eliminated.

9.(currently amended) A method for producing L-lysine, comprising the steps of culturing the *Methylophilus* bacterium of claim 7 or 8 in a medium containing methanol as a major carbon source resulting in accumulation of L-lysine in culture, and collecting the L-lysine from the culture.